

REMARKS

Applicant acknowledges receipt of the Office Action dated June 29, 2007, in which the Examiner objected to the Drawings; objected to the Specification (Abstract); rejected the claims under § 112, second paragraph; rejected claims 1, 2, 5-9, and 12-19 as anticipated by Blange (US 6,510,907); rejected claims 8, 9, 15 and 19 as obvious in view of the combination of the '907 patent with US 2007/0079998; and indicated that claims 3, 4, 10, 11 and 20 would be allowable if re-written in independent form.

Applicant has amended the drawings and specification (Abstract) and claims and respectfully submits that the case is now allowable for the reasons set out below.

Drawings

As stated above, the Drawings have been amended as required by the Examiner. The relevant passages in the specification have been amended for consistency.

Objection to the Specification (Abstract)

The Abstract has been amended to cure the grounds for objection.

§ 112 Rejection of the claims

Claims 1 and 3 have been amended to cure the grounds for objection. Claims 6, 13, and 17 have each been amended to recite that the skirt comprises "an arcuate member", thereby adding a limitation to the structure.

§ 102 Rejection of claims 1, 2, 5-9, and 12-19 as anticipated by Blange (US 6,510,907)

In support of this rejection, the Examiner cites the '907 reference has having "an entrance window 18 whereby filtering means 16, 19, 22, 24 is provide in a path fluidly connecting the return stream with the entrance window, capable of keeping the abrasive particle inlet free from objects of the same same size or larger than the size of the entrance window, which filtering means is passable for the abrasive particles."

Applicant respectfully submits that the rejection is based on an improper reading of the '907 reference. For ease of reference, the relevant paragraph of the '907 reference is reproduced in the footnote below.¹ Specifically, the '907 reference does not teach a filtering means that is separate from the inlet itself. Rather, the '907 reference teaches a tapered "niche 18" that serves to funnel the return stream of abrasive particles back into the stream of fluid that is to be jetted against the borehole bottom. The tapered niche 18 is defined by side walls 19, 22 and 24 and the outer surface of rotating cylinder 16. The abrasive particles that are being recycled enter the fluid stream via "second inlet 14," (the first inlet 12 being upstream in the main fluid flow).

A careful review of the '907 reference, however, reveals that niche 18 is not capable of "keeping the abrasive particle inlet free from objects of the same size or larger than the abrasive particle inlet," as required by claim 1 and therefore cannot serve as a "filtering means." This is because at no point does niche 18 have a dimension that is the same as (or smaller than) the abrasive particle inlet 14. Thus, an object "of the same size or larger than the abrasive particle inlet [14]" could proceed unimpeded until it reached inlet 14 and became stuck. Thus, the '907 reference is wholly lacking a "filtering means" as presently claimed.

Regarding the rejection of claim 2, Applicant does not follow the Examiner's statements regarding "filtering means 16, 19." Because "inlet 14" in the '907 reference is defined by the termination of the walls of niche 18 and cylinder 16, it is not clear what the Examiner intends by reference to a "filter opening." In the '907 reference, there is only one opening through which returning abrasive particles must pass, i.e. opening 14, and there is no other opening ("filtering means") in the returning particles' path that can prevent oversized particles from reaching and obstructing opening 14.

¹ "As shown in FIG. 2 the body 5a is provided with a niche 18 having a semi-cylindrical side wall 19 and being in fluid communication with the mixing chamber 10 and with the second inlet 14. The niche 18 and the second inlet 14 are formed as a single recess in the body 5a. A rotatable cylinder 16 is arranged in the niche 18, the diameter of the cylinder being such that only a small clearance is present between the cylinder 16 and the side wall 19 of the niche 18 (in FIG. 2 the cylinder 16 has been removed for clarity purposes). The axis of rotation 20 of the cylinder 16 extends substantially perpendicular to the inlet nozzle 12. The second inlet 14 and the mixing chamber 10 each have a side wall formed by the outer surface of the cylinder 16. The second inlet 14 furthermore has guide elements in the form of opposite side walls 22, 24 which converge in inward direction to the mixing chamber 10 and which extend substantially perpendicular to side wall 19 of niche 18." US Pat. 6,510,907, col. 3, ll. 6-22.

For these reasons, and in view of the amendments to clarify claim 1, Applicant respectfully requests that the Examiner reconsider and withdraw the § 102 rejection of claims 1, 2, 5-9, and 12-19 as anticipated by Blange.

§ 103 Rejection of claims 8, 9, 15 and 19 as obvious in view of the combination of the '907 patent with US 2007/0079998

Applicant respectfully submits that this rejection is deficient for the same reasons as set out above. Namely, the '907 reference fails to any filtering means that can keep oversized particles from obstructing the inlet for recycled abrasive particles into the fluid stream. Like the '907 reference, the '998 reference also does not disclose any filtering means. Thus, the combination of the references does not result in a device meeting the limitations of the claims.

Allowable subject matter

The Examiner indicated that claims 3, 4, 10, 11 and 20 would be allowable if re-written in independent form. Applicant has re-written claims 3 and 4 in independent form and canceled claim 10. Claims 11 and 20 depend from claim 3 and are therefore allowable without amendment.

Conclusion

In view of the foregoing, Applicants believe that all of the claims are in condition for allowance and favorable consideration by the Examiner is requested. Should the Examiner find any impediment to the prompt allowance of the claims that can be corrected by telephone interview, the Examiner is requested to initiate such an interview with the undersigned.

Respectfully submitted,

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